

Serial No. 09/839,298  
Docket No. NEC01P030-HSc

2

**AMENDMENTS TO THE CLAIMS:**

Claim 1. (Original) A semiconductor device comprising:

a semiconductor chip;  
a stud bump provided on an electrode of said semiconductor chip; and  
an adhesive layer provided on a surface of said semiconductor chip on which said electrode is formed,  
wherein said stud bump projects from a surface of said adhesive layer.

Claim 2. (Currently amended) The semiconductor device according to claim 1, further comprising:

an interposer bonded to said adhesive layer, wherein said adhesive layer comprises a thermocompressive adhesive through thermocompression bonding.

Claim 3. (Currently amended) A semiconductor device comprising:

a semiconductor chip;  
an adhesive ~~a protection resin~~ layer provided on a surface of said semiconductor chip on which an electrode is formed;  
a bump provided on said electrode of said semiconductor chip and exposed at a surface of said adhesive ~~protection resin~~ layer; and  
an interposer adhered to said surface of said adhesive ~~protection resin~~ layer through a cured flux and electrically connected to said bump.

Claim 4. (Original) The semiconductor device according to claim 2, wherein said

Serial No. 09/839,298  
Docket No. NEC01P030-HSc

3

interposer is provided with a device hole.

Claim 5. (Previously amended) A semiconductor device comprising:

a semiconductor chip;

an adhesive layer formed on a surface of said semiconductor chip on which an electrode is formed;

a bump provided on said electrode of said semiconductor chip and projecting from a surface of said adhesive layer;

a wiring pattern adhered to said surface of said adhesive layer and partially bonded to said bump; and

an insulating and covering layer for insulating and covering said wiring pattern and selectively opening to form an external connecting portion.

Claim 6. (Currently amended) A semiconductor device comprising:

a semiconductor chip;

an adhesive ~~a protection resin~~ layer provided on a surface of said semiconductor chip on which an electrode is formed;

a bump provided on said electrode of said semiconductor chip and exposed at a surface of said adhesive ~~protection resin~~ layer;

a wiring pattern adhered to said surface of said adhesive ~~protection resin~~ layer through a cured flux and partially bonded to said bump; and

an insulating and covering layer for insulating and covering said wiring pattern and selectively opening to form an external connecting portion.

Serial No. 09/839,298  
Docket No. NEC01P030-HSc

4

Claim 7. (Currently amended) A semiconductor apparatus comprising:

two or more semiconductor devices, each of said devices comprising:

a semiconductor chip;

an adhesive layer provided on a surface of said semiconductor chip on which  
an electrode is formed; and

a bump provided on said electrode of said semiconductor chip and projecting  
from ~~exposed at~~ a surface of said adhesive layer,

wherein part of a surface of one of said semiconductor devices on which said adhesive  
layer is provided is adhered to part or all of a surface of another one of said semiconductor  
devices on which said adhesive layer is provided and said one and said another one of said  
semiconductor devices are electrically connected to each other with said bumps at the  
adhesion surface.

Claim 8. (Previously amended) A semiconductor apparatus comprising:

two or more stacked semiconductor devices, each of said devices comprising:

a semiconductor chip having electrodes formed on the front and back;

an adhesive layer provided on the front or back of said semiconductor chip;

and

a bump provided on said electrode of said semiconductor chip and exposed at  
a surface of said adhesive layer,

wherein one of said semiconductor devices is adhered to an underlying one of said  
semiconductor devices through said adhesive layer and the electrodes thereof are connected to  
each other through said bump.

Serial No. 09/839,298  
Docket No. NEC01P030-HSc

5

Claim 9. (Previously amended) The semiconductor device according to claim 1, wherein said adhesive layer comprises a thermoplastic resin with adhesion.

Claims 10 - 24 (Previously canceled)

Claim 25. (Original) A semiconductor device comprising:

a semiconductor chip;

an adhesive layer provided on a surface of said semiconductor chip on which an electrode is formed;

a bump provided on said electrode of said semiconductor chip and exposed at a surface of said adhesive layer;

a tape substrate; and

an interposer,

wherein said semiconductor chip is adhered to the front of said tape substrate with said adhesive layer, said semiconductor chip is electrically connected to said tape substrate with said bump, and said interposer is connected to the back of said tape substrate for allowing electrical conduction.

Claim 26. (Previously added) A semiconductor device according to claim 1, wherein a top of said stud bump protrudes from a lower surface of said adhesive layer.

Claim 27. (Previously canceled)

Serial No. 09/839,298

6

Docket No. NEC01P030-HSc

Claim 28. (Previously added) A semiconductor device according to claim 1, wherein said stud bump comprises gold.

Claim 29. (Previously added) A semiconductor device according to claim 1, wherein said adhesive layer comprises a thermosetting adhesive layer.

Claim 30. (Previously added) A semiconductor device according to claim 1, wherein said adhesive layer comprises a thermoplastic PI region having a thickness of 50  $\mu\text{m}$ .

Claim 31. (Previously amended) A semiconductor device according to claim 1, wherein said adhesive layer comprises a thermoplastic resin having a thickness of 50  $\mu\text{m}$ .